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EXAMINER	
LE, BRIAN Q	

ART UNIT	PAPER NUMBER
2623	

DATE MAILED: 06/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/935,683	HUANG ET AL.	
	Examiner	Art Unit	
	Brian Q. Le	2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16, 20-26, and 30-37* is/are rejected.

7)☒ Claim(s) *17-19 and 27-29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *24 August 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Response to Amendment and Arguments

1. Applicant's amendment filed November 30, 2004, has been entered and made of record.

2. Regarding the rejection of claims 9, 20-21, and 25-26 under 35 U.S.C 112, first paragraph, Applicant's argument with regard to the support of the original disclosure for the concept of pattern recognizers are operating in parallel is considered persuasive and thus withdrawn. However, the rejection regarding the complementary recognition algorithms or complementary pattern recognizers is not considered persuasive and thus the rejection is maintained. The Examiner clearly has met the initial burden by indicating that "complementary recognition algorithms" is not supported in the original disclosure and that one skilled in the art does not understand what complementary recognition algorithms are. Further more, even if "complementary recognition algorithms" are well known in the art, the Applicant cannot claim it if it does not discuss in the context of specification. The specification should have shown the definition of "complementary recognition algorithms".

3. The rejection of claims 17-19 and 27-29 under 35 U.S.C. 112, second paragraph is withdrawn.

4. Applicant's arguments with regard to claims 1-37 have been fully considered, but are not considered persuasive because of the following reasons:

Regarding claim 1, the Applicant argues (page 19 of the Remarks) that Koike Reference U.S. Patent No. 6,181,805 does not teach "performing at least one transform on the segmented target object to generate at least one transformed object" because the Applicant believes the interpretation was improper. The Examiner respectfully disagrees. Koike clearly teaches this limitation due to broadly claimed language "performing (perform is an act/carry out/do by

Merriam-Webster Online) at least one transform (transform is to convert or change in composition/structure/form/appearance/character/condition again by Merriam-Webster Online) (Thus, the act of shifting the position of selected section of image clearly is an ac/do/carry out/perform at least one transform as indicated by Koike on FIG. 1, element 108 and column 4, lines 46-55) on the segmented (cut out/separated/extracted) (FIG. 1, element 107A) target object (the working object) (FIG. 1, elements 102 and 109) to generate at least one transformed object (the result after shifting the position of selected section of image) (output from FIG. 1, element 108)". Thus it is so clear that Koike Reference has anticipated the claim's language and teaches each and every element of the claim. If the Applicant still believes that the claiming invention is unique and is novelty in the art, then the Applicant must claim more specifically and further define the invention to avoid reasonably broad interpretation. Also, the Applicant argues (page 20) that Koike does not teach "outputting the segmented target object and the at least one transformed object to at least one pattern recognizer" due to the fact that the Applicant believes that Koike does not disclose the term "performing" and "outputting" of claim 1. As clearly explained, "position shifting" is an act of performing. "Outputting" is when results are generated/come out of a certain process; thus "Outputting" is clearly teaches by Koike at FIG. 1 and column 3, lines 57-65; column 4, lines 40-45; column 5, lines 10-15 and lines 25-30; column 7, lines 55-60 (perhaps through out the reference).

Regarding claim 11 (page 21 of the Remarks), please refer back to the discussion of claim 1 for the limitation "segmenting the target object from the input object to form a plurality of segmented target objects.". Koike Reference, FIG. 1 clearly teaches this limitation. It would take in plurality of input images/objects and segment/cutout to generate segmented target objects

(as shown in previous discussion). Further more, Koike clearly teaches the "detecting a target object within the input object" (the concept of matching region of the object to be recognized is extracted from each of the object images) (abstract, first 5 lines).

Regarding claim 16, the Applicant argues that Koike fails to disclose the claim language "receiving". Again, as discussed earlier, Koike clearly teaches "segmented target object and at least one transform of the segmented target object". In addition, there is "receiving" is can reasonably interpreted as "inputting" because if the device/apparatus is inputting then it is receiving. Further the Applicant argues (page 22) that Koike fails to disclose, "performing at least one pattern recognition algorithm". If the Applicant has considered the reference, the Applicant would see that Koike clearly teaches this concept at column 3, lines 45-56. Also, the Applicant argues (bottom of page 22) that Koike fails to teach, "aggregating the plurality of recognition results to determine a recognition decision". As defined by Merriam-Webster Online, aggregate is collective/taking all units as a whole/formed by the collection of units. Thus, it is so clear that Koike teaches, "aggregating the plurality of recognition results to determine a recognition decision" (the accumulation/collection of all degrees of similarity of each recognition to determine a final recognition decision based on the highest similarity).

Regarding to arguments of claims 22, 30, 32, 33-35, please refer back to the explanations above for all the discussed subject matters. The Applicant basically repeated the arguments of the same subject matters for all the claims since the claim languages convey similar subject matter.

For claim 3, the Applicant argues (bottom of page 25) that there is no prima facie obviousness because Shustovovich Reference U.S. Patent No. 5,542,006 does not cure Koike's

deficiencies and that there is no motivation to combine Shustovovich to Koike. First, since the Examiner clearly explained (above) that not only that Koike has anticipated all the discussed limitation but also clearly teaches them repeatedly through out the reference. Therefore, the Examiner does not need to use Shustovovich Reference to cure Koike's deficiencies because there are no deficiencies from Koike's Reference for the discussed claims. Second, Koike teaches object detection not only for human faces but also to any kinds of object recognitions (column 3, lines 45-47). Thus, it would be clear to one skilled in the art that Shustovovich Reference can be combined with Koike's Reference since it does optical character recognition (OCR). Clearly, character recognition is object recognition. Thus, the Applicant claimed (claim 3) that wherein target object represents a handwritten character and Shustovovich teaches OCR. Therefore, it would have been obvious to one of the ordinary skill in the art to modify Koike according to Shustorovich because Shustovovich has shown that target object can be handwritten character. Therefore, prima facie is established with respect to claim 3 and the rejection of 35 U.S.C. 1003(a) will be maintained.

It is so clear that the Applicant invention may be novel over the prior art. However, claim language of independent claims is very broad and thus is subjected to interpretations. To further assist the Applicant with the guidance with claim language interpretations so that the Applicant can add further/more details limitations from the specification to the claims to overcome the prior arts, the Examiner is presenting MPEP, section 2111, Claim Interpretation; Broadest Reasonable Interpretation as follow: "The court explained that "reading a claim in light of the specification, to thereby interpret limitations explicitly recited in the claim, is a quite different thing from reading limitations of the specification into a claim,' to thereby narrow the

scope of the claim by implicitly adding disclosed limitations which have no express basis in the claim." The court found that applicant was advocating the latter, i.e., the impermissible importation of subject matter from the specification into the claim.). See also In re Morris, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027-28 (Fed. Cir. 1997) (The court held that the PTO is not required, in the course of prosecution, to interpret claims in applications in the same manner as a court would interpret claims in an infringement suit. Rather, the "PTO applies to verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in applicant's specification.")".

Thus, the rejections of all of the claims are maintained.

Drawings

5. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the concept of **"complementary recognizers" or "complementary recognition algorithm"** (emphasis added) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must

be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claims 9, 20 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Referring to claims 9, 20 and 25, there is no support in the original disclosure regarding the **complementary** recognition algorithms or **complementary** (emphasis added) pattern recognizers. The Applicant must clearly show page number, line number and drawing figures that support this claimed concept.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-2, 4-16, 20-26 and 30-35 are rejected under 35 U.S.C. 102(e) as being anticipated by Koike U.S. Patent No. 6,181,805.

Regarding claim 1, Koike teaches a method of processing an input object for pattern recognition comprising the steps of (abstract):

receiving an input object (FIG. 1, element 101);

segmenting a target object from the input object to form a segmented target object (FIG. 1, elements 102-103);

performing at least one transform (position shifting) on the segmented target object to generate at least one transformed object (FIG. 1, element 108); and

outputting the segmented target object (output of the segmented object comes out from FIG. 1, element 104) and the at least one transformed object (output of the transformed object comes out from FIG. 1, element 108) to at least one pattern recognizer (FIG. 1, element 106).

Regarding claim 2, Koike teaches the method wherein: the target object represents an image of a person's face (FIG. 2 and FIG. 3).

For claim 4, Koike further teaches the method wherein: the target object represents a biometric (face, mouth and eyes) (column 5, lines 45-50).

Referring to claim 5, Koike discloses the method wherein: the transform is a rotation transform (column 6, lines 15-25).

Regarding claim 6, Koike also discloses the method wherein: the transform is a boundary shift transform (affine transform that involves positional relation of the feature points) (column 13, lines 55-60).

For claim 7, Koike further discloses the method wherein: the transform is an affine transformation (column 13, lines 55-60).

For claim 8, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a single recognizer (please refer back to claim 1).

Referring to claim 9, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a plurality of complementary recognizers (complementary recognizers can be matching region method, similarity computer method and object detecting method) (column 4, lines 40-67).

For claim 10, Koike teaches the method wherein the outputting step comprises: outputting the segmented target object and the at least one transformed object to a plurality of substantially identically recognizers (complementary recognizers can be matching region method, similarity computer method and object detecting method) (column 4, lines 40-67).

Regarding claim 11, please refer back to claim 1 for the teachings. In addition, Koike further teaches the detecting a target object within the input object and segmenting the target

object from the input object to form a plurality of segmented target objects (abstract, first 5 lines).

For claim 12, Koike teaches the method wherein the step of segmenting the target object from the input object to form a plurality of segmented target objects comprises: modifying the target object (adjusting size and position of the object) (column 4, lines 15-20).

Referring to claim 13, Koike discloses the method wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: modifying a scale of the target object (adjusting size of the object) (column 4, lines 15-20).

Regarding claim 14, Koike further teaches the method of wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: shifting at least one boundary surrounding the target object (affine transform that involves positional relation of the feature points) (column 13, lines 55-60).

For claim 15, Koike teaches the method wherein the step of segmenting at least one target object to form a plurality of segmented target objects comprises: rotating the target object (column 6, lines 15-25).

Regarding claim 16, Koike teaches a method of aggregating a plurality of recognition results (The process of comparing the target object to the stored/dictionary images and accumulate the similarity to find the highest degree of similarity for the matching process) (column 2, lines 30-38) comprising the steps of:

receiving a segmented target object (receiving the segmented object comes out from FIG. 1, element 104) and at least one transform of the segmented target object (receiving of the transformed object comes out from FIG. 1, element 108);

performing at least one pattern recognition algorithm on the segmented target object (FIG. 1, element 102-103)and the at least one transform (FIG. 1, element 108) to generate a plurality of recognition results (FIG. 1, element 109);

aggregating the plurality of recognition results to determine a recognition decision (The process of comparing the target object to the stored/dictionary images and accumulate the similarity to find the highest degree of similarity for the matching process) (column 2, lines 30-38 and column 4, lines 55-67); and

outputting the recognition decision (FIG. 1, element 109 and 110).

For claims 20, please refer back to claims 9 for the teaching.

Referring to claim 21, Koike further shows the method wherein the performing step includes performing in parallel a plurality of substantially identical recognition algorithms (the facial cut-out recognition can process in parallel with the matching/similarity computing as recognition algorithms) (FIG. 1, elements 102, 106, and 107).

Regarding claim 22, please refer back to claims 1, 11, and 16 for the teachings and explanation.

For claims 23 - 26, please refer back to claim 5, 6 and 21 respectively for the teachings.

Regarding claim 30, please refer back to claims 1, 11, and 16 for the teachings and explanation.

For claim 31, please refer back to claims 12 or 13 or 14 or 15 for the teachings and explanations.

Regarding claims 32-35, please refer back to claims 1, 11, and 16 for the teachings and explanations.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Koike U.S. Patent No. 6,181,805 and Shustorovich U.S. Patent No. 5,542,006 as applied to claim 1.

Regarding claim 3, Koike indicates that the teaching of processing an input object for pattern recognition wherein the input object can be a face or other category (column 2, lines 15-18). Shustorovich further teaches the handwritten character/pattern recognition wherein the target object can be handwritten character (the detection of the center position of handwritten character) (column 8, lines 62-67). Modifying Koike's method of processing an input object for pattern recognition according to Shustorovich would able to represent handwritten character as target object. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Koike according to Shustorovich.

12. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Koike U.S. Patent No. 6,181,805 and Alves et al. U.S. Patent No. 5,093,869 as applied to claims 11 and 34.

Regarding to claim 11, please refer back to claim 11 for the teachings of target object detection and segmentation the target object. However, Koike does not explicitly teach the detecting the target object using plurality of algorithms. Alves teaches a method of detecting

objects (abstract) wherein it is well known of one skilled in the art that various architectures and algorithms can be used in detecting target object (column 1, lines 20-25). Modifying Koike's method of pattern recognition for input object according to Alves would able to provides different algorithms in detecting input objects. This would improve processing and therefore, it would have been obvious to one of the ordinary skill in the art to modify Koike according to Alves.

For claim 37, please refer back to claim 36 for the teaching and the explanation.

Allowable Subject Matter

12. Claims 17-19 and 27-29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Q Le whose telephone number is 571-272-7424. The examiner can normally be reached on 8:30 A.M - 5:30 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 571-272-7414. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9306 for regular communications and 703-872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

BL
May 19, 2005

SAMIR AHMED
PRIMARY EXAMINER